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Opportunities and challenges of using diagnostic databases for monitoring livestock diseases in Denmark

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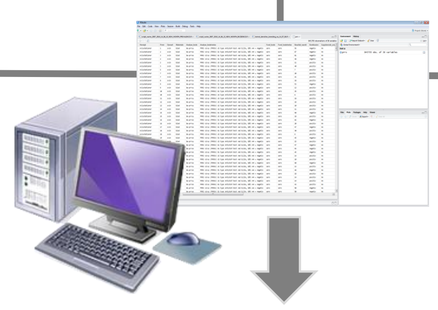
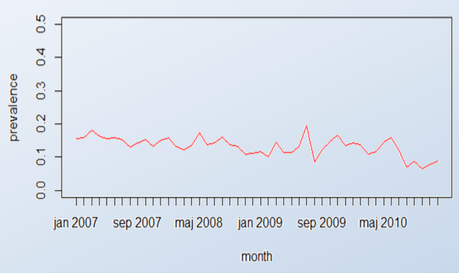
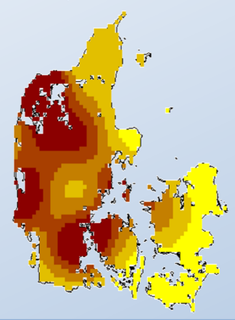
Background

Several databases are being used in Denmark to record information at different stages and levels of modern livestock production gathering large volumes of routinely collected data. This poster describes an ongoing PhD project at the National Veterinary Institute of the Technical University of Denmark with the objective of developing a monitoring framework based on spatiotemporal analysis to optimize methods for detection of anomalies in submission patterns and methods for early warning.

Project description

Steps	Workflow	Challenges
1. Identify potential data sources	Ministry of Food, Agriculture and Fisheries: Central Husbandry Register; Meat inspection; Animal trades Agriculture Sector: Mortality rates; Dairy production; Production parameters Private Sector: Laboratory diagnostic data	Representativeness and timeliness Political bottleneck in gathering the data
2. Merging data		Technical bottleneck: data formats
3. Explore the data and identify the most adequate statistical procedures	**Data exploration** Describe trends, seasonality and potential impact of covariates on the baseline patterns.  	Identify potential patterns Define performance indicators Define timescale and spatial distances Identify outline events for new diseases

Syndromic surveillance tool or target disease surveillance system

Perspectives

These database could have the potential to be used not only for early detection of disease, but also for near real-time monitoring of outbreak and trends in diseases and to provide reassurance of disease freedom. This will enable a timely and appropriate response to a disease outbreak, minimizing economic impacts through fast implementation of disease prevention and control measures.